Julianna Cruz's Comments to:
Interim Report Draft for the Upper Mississippi and Illinois Waterway Restructured System Navigation Feasibility Study, 10 May 2002.

The Corps should be commended for working diligently through a collaborative process of involving many stakeholders in achieving a workable draft document.

Main Issues/Comments:

Pg. 62 2.4.2.4 Second paragraph. Recreational visits to the Upper Mississippi River region exceeded 15 million trips in 2000. On page 16, it's 11 million recreational visits. What studies are you using to substantiate this statement? Also due to 360 boat access points and or marinas and 11,500 marina slips along the UMR,.. According to US EPA, marinas can have huge adverse ecological impacts to an area's water body. What are these marinas & recreational adverse impacts to the Upper MS & IL River Waterways System (e.g., petroleum derivatives released to the Air - & Water- Sheds within these river systems from recreational boats, especially from 2 – stroke marine engines)? There are studies that have indicated that fish eggs and other organisms are very vulnerable and negatively impacted by these petroleum derivatives. For instance these fish eggs and other ecological beneficial organism's larva can die within minutes of certain low concentration levels of petroleum derivatives.

This information needs to be included within this interim report. It is necessary to ensure these impacts are assessed and evaluated to understand and ensure an environmental sustainability for these river systems.

Response. The final Interim report was corrected to reflect 11 million trips reference Black et al 1999 in the final report.

In support of the cumulative impacts assessment for the Navigation study, future recreational boating usage was projected. The numbers of recreational boating trips were estimated for different vessel categories for each navigation pool using existing data and projecting future unconstrained usage. Future projections of recreational boating on the system might be biased towards overestimation, given the assumption of unconstrained growth. The results of the recreational boating allocation model were also used to assess the potential impacts of recreational vessels on selected ecological resources (e.g., plants, fish) in the river. While it is recognized that emissions of petroleum derivatives from recreational vessels can pose risks to aquatic organisms, these impacts were not quantitatively addressed in the previous environmental assessment. In fact, the examination of recreational boating was done more to provide a context for interpreting (in a cumulative impact context) the significance of corresponding commercial navigation impacts. Previous analysis indicated that alternative commercial Navigation efficiency measures would have no effect on recreation craft usage on the sys tem.

Therefore, the impacts of marinas are not being quantitatively addressed as part of the revised navigation study.

Pg. 62 2.4.2.4 Second paragraph. Regional economic impacts of recreation are included, however regional impacts of navigation are not included. **Include regional economic impacts of navigation too.**

Response. A Regional Economic Development (RED) analysis will be included in the Feasibility report.

Pg. 104 2.5.1.3.2 To suggest that seasonal traffic closures have merit based on the fact that larvae fish are entrained in towboat propellers **has not be proven scientifically, with at least a statistical 90-95% confidence interval**. Larvae fish studies have also demonstrated that the propeller impacts are negligible for overall species of fish when compared to the universe of larvae fish and natural accretion. Also based on the current review (May 2002) of an on going study, "Evaluation of Propeller-Induced Mortality of Juvenile and Adult Fishes in the Mississippi River Summary of Feasibility Study –DRAFT", could not prove or demonstrate **scientifically, with at least a statistical 90-95% confidence interval;** that larvae fish are entrained in towboat propellers. This is still currently being evaluated within the field. Please indicate that it has not been proven as of yet or remove this statement until the data indicates this correlation.

Response. Concerns regarding the entrainment and mortality of larval fish are based on extensive measurements of larval fish abundance in the UMR-IWW navigation channel, experimental assessment of mortality measured for larvae subjected to physical forces analogous to shear stresses and pressure changes in the propeller zone of commercial vessels, and estimates of water entrainment by commercial vessel configurations common to the river. These separate, but well established, lines of evidence support concerns for larval fish entrainment by commercial vessels. The technical difficulty in collecting larval fish and attributing any observed mortality to commercial navigation makes it difficult to "prove" entrainment of these organisms. However, larval fish entrainment mortalities have been estimated for the UMR-IWW with varying degrees of precision through the use of risk based models developed to reflect the above observations and processes. Thus, reducing traffic during the spawning season might well reduce the number of larval fish lost to entrainment. In addition, entrainment of adult fish has been demonstrated by field sampling, although entrainment of juvenile fish remains to be conclusively determined in the UMR-IWW.

Seasonal closures are also being considered to facilitate pool drawdowns for the purpose of replicating a natural hydrograph and promoting the establishment of aquatic vegetation.

Entrainment mortalities can be compared to other sources of mortality for larval fish to evaluate the relative importance of entrainment in determining the population dynamics of fish subject to entrainment. However, it must be recognized that estimating other sources of mortality is for the most part no less difficult than estimating entrainment mortality. The previous assessment focused on entrainment by commercial vessels in order to develop mitigation plans. The emphasis on sustainable environmental

management in the revised navigation study might rightly expand the study to include the evaluation of other sources of mortality in establishing feasible management objectives for selected fish populations in the UMR-IWW.

Are we also going to include all information pertaining to past and current projects of ecological habitat improvements, on these river systems that are working or not working (to include scientifically of why or why not on how these projects are functioning)?

Response. As part of establishing objectives and management actions for a sustainable environment, previous habitat restoration methods will be assessed. The emphasis on adaptive management in the interim report demonstrates the need for performance monitoring and feedback for any future implementation.